

<b>Notice of Allowability</b>	Application No.	Applicant(s)	
	10/707,606	CHENG, YUH	
	Examiner	Art Unit	
	Linh T. Nguyen	2627	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/18/06.
2. ☒ The allowed claim(s) is/are 1-4 and 17-23.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

## DETAILED ACTION

### *Election/Restrictions*

This application is in condition for allowance except for the presence of claims 5-16 and 24-27 are directed to a species non-elected without traverse. Accordingly, claims 5-16 and 24-27 have been cancelled.

### *Allowable Subject Matter*

Claims 1-4 and 17-23 are allowed.

In regards to claim 1, none of the references of record alone or combination disclose or suggest a method for deriving a tracking error signal based on a first analog detection signal and a second analog detection signal, the method comprising: summing the first analog detection signal and the second analog detection signal to generate an analog sum signal; utilizing an analog delay device to delay the analog sum signal into a delay signal; digitalizing the delay signal into a digital delay signal; transforming the first analog detection signal and the second analog detection signal respectively into a first digital detection signal and a second digital detect signal; and respectively comparing the digital delay signal with the first digital detection signal and comparing the digital delay signal with the second digital detection signal to generate the tracking error signal.

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In regards to claim 17, none of the references of record alone or combination disclose or suggests a tracking error signal generator used in an optical storage system for generating a tracking error signal comprising: two signal processing ports for respectively providing a first analog detection signal and a second analog detection signal, wherein there is a time difference between the first analog detection signal and the second analog detection signal; **a synthesizer electrically connected to the two signal processing ports for synthesizing the first analog detection signal and the second analog detection signal into an analog sum signal; an analog delay device electrically connected to the synthesizer for delaying and digitalizing the analog sum signal into a digital delay signal;** two digitizers respectively electrically connected to the two signal processing ports for respectively transforming the first analog detection signal and the second analog detection signal into a first digital detection signal and a second digital detect signal; and a **comparing module electrically connected to the analog delay device and the two digitizers for respectively comparing the digital delay signal with the first digital detection signal and comparing the digital delay signal with the second digital detection signal to generate the tracking error signal.**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Buchler (US Patent number 6266305) discloses a tracking error apparatus with four-quadrant detector with a summation of two signals digitalize and compare with the time interval between the two signals.

Lai et al (US Publication number 2005/0015687) discloses an apparatus and method of tracking error by adding signal A+C and B+D and comparing phase different between the group signals to the splitting signals.

Huang et al (US Publication number 2004/0160866) discloses a circuit of tracking error by comparing and delaying plurality of digital signals.

Ishibashi et al (US Patent Number 6134197) discloses an optical disk drive apparatus, which add and delay digital signals to supply to a phase comparator.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh T. Nguyen whose telephone number is 571-272-5513. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A. Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LN  
August 28, 2006

  
ANDREA WELLINGTON  
SUPERVISORY PATENT EXAMINER